



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,996	08/21/2003	Chang-Hyen Chun	0630-1655P	7096
2292 7590 03/12/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER DESIR, PIERRE LOUIS	
			ART UNIT 2617	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/12/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/19/2006 have been fully considered but they are not persuasive.

Applicants argue that Kim's teaching of a timer is not related to reverting the changed radio link set back the previous backup-radio link set when the reply is not received and the first period of time has expired. Also, Applicants add that the alleged first timer for counting the first period of time refers to an action time that the node B is to transmit the user data to the UE.

Examiner respectfully disagrees. The claim (claim 4) reads, "...operating a first timer for counting a first period of time after the changing set...operating a second timer to count a second period of time that is shorter than the first period of time...retransmitting the radio link set completion message when the reply signal is not received in the second period of time; reverting the changed radio link set back to the previous backed up radio link set when the reply signal is not received and the first period of time has expired..." From the claim's language, and as understood by Examiner of Applicants' claims, Examiner does not perceive how the first timer is related to the second timer. The retransmission step takes place when the reply signal is not received in the second period time and the reverting step takes place when the reply signal is not received and the first period of time has expired. Thus, from Applicants remarks received on 12/19/2006, Applicants make reference to Fig. 4, wherein it is disclosed, "if the first timer has expired **in addition** to the second timer, the changed radio link is reverted back to the previous backed-up radio link set. Thus, the present invention uses a combination of first and second timers to determine if the RCL-ACK is received from the RNC and to determine whether or not

to revert back to a previous backed-up radio link set.” Nowhere in the claim language is there a specific disclosure of using a combination of both timers for specific actions to take place, nor is there a disclosure of the first timer expiration in addition to the second timer expiration for specific actions to take place. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, as stated in the previous Office Action, Examiner stated that Kim discloses a method wherein a retransmission request and a response for the retransmission request based on HARQ between the UE 130 and the Node B 123 takes a relatively short time (see fig. 15, paragraphs 12 and 90), and if the radio link setup response is not received, there will be a retransmission (see figs. 13 and 15, paragraphs 62, 71-72, and 86). And, Hagting discloses a method wherein a call with a remote unit is handed over from a first radio access unit to a second radio access unit by suspending transmission of the remote unit at a first radio link while maintaining the transmission at this first radio link by the first radio access unit is established by the remote unit and the call is resumed at the second radio link after which the radio link is released by the first radio access unit) (see abstract); wherein the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated (see col. 3, lines 20-27). Thus, the first radio link is terminated only when data over the second link is successfully exchanged in both directions.

Applicants are respectfully invited to include in the claim language the combination usage of both first and second timers, and their expiration which would result in the "reverting back" step.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-5, 9, 11-12, 14, 16-19, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (Kim), Pub. No. US 20030031119, in view of Hagting et al. (Hagting), U.S. Patent No. 6236860.

Regarding claim 1, Kim discloses a handover processing method for a mobile communication system (see figs. 1-3), the method comprising: requesting a radio link set to a radio network controller (i.e., the SRNC transmits a radio link set up request message) (see page 2, paragraph 20); driving a first timer for counting a first time duration (i.e., the reception indicator indicates an action time of transmitting user data) (see page 3, paragraph 22); transmitting a radio link set completion message to the RNC (i.e., transmits a radio link setup response message to the SNRC) (see page 2, paragraph 20); driving a second timer for counting a second time duration (see paragraphs 12 and 75); checking whether a reply signal in response to the radio link set completion is received (i.e., determines whether a radio link setup response message has been received) (see fig. 15, page 8, paragraph 90).

Although Kim discloses a method comprising checking whether the reply signal is received within a second time duration that is shorter than the first time duration (a retransmission request and a response for the retransmission request based on HARQ between the UE 130 and the Node B 123 takes a relatively short time) (see fig. 15, paragraphs 12 and 90); retransmitting the radio link set completion message when the reply signal is not received (i.e., as seen in fig. 15, if the radio link setup response is not received, there will be a retransmission) (see figs. 13 and 15, paragraphs 62, 71-72, and 86), Kim does not specifically disclose a method comprising performing a backup of a present radio link set and changing the present radio link set, when the radio set request is provided; and reverting the changes radio link set back to the backed-up radio link set when the reply signal is not received from the RNC within a certain time duration.

However, Hagting discloses a handover processing method comprising performing a backup of a present radio link set and changing the present radio link set, when the radio set request is provided (i.e., a call with a remote unit is handed over from a first radio access unit to a second radio access unit by suspending transmission of the remote unit at a first radio link while maintaining the transmission at this first radio link by the first radio access unit is established by the remote unit and the call is resumed at the second radio link after which the radio link is released by the first radio access unit) (see abstract); and reverting the changes radio link set back to the backed-up radio link set when the reply signal is not received from the RNC within a certain time duration (i.e., the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated) (see col. 3, lines 20-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a handover method, which can be used in synchronously and asynchronously operated environments.

Regarding claim 2, Kim discloses a method as described above (see claim 1 rejection).

Although Kim discloses a method comprising checking whether the reply signal is received within the first time duration (see fig. 15, page 8, paragraph 90), Kim does not specifically disclose a method comprising reverting the radio link set to the backed-up radio link set when the reply signal is not received within the first time duration.

However, Hagting discloses a handover processing method comprising reverting the changes radio link set back to the backed-up radio link set when the reply signal is not received from the RNC within a certain time duration (i.e., the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated) (see abstract, col. 3, and lines 20-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a handover method, which can be used in synchronously and asynchronously operated environments.

Regarding claim 4, Kim discloses a handover processing method for a mobile communication system (see figs. 1-3), the method comprising: starting a handover procedure (i.e., once the UE 130 enters the soft handover region, the SRNC 121 recognizes it from a Measurement Report received from the UE 130 and determines to establish new radio links) (see

page 2, paragraph 20); requesting a radio link set to a radio network controller (RNC) when the handover procedure starts (i.e., the SRNC transmits a radio link set up request message) (see page 2, paragraph 20); operating a first timer for counting a first period of time after the changing step (i.e., the reception indicator indicates an action time of transmitting user data) (see page 3, paragraph 22); transmitting a radio link set completion message to the RNC (i.e., transmits a radio link setup response message to the SNRC) (see page 2, paragraph 20) and waiting for a reply signal in response to the radio link set completion message (i.e., determines whether a radio link setup response message has been received) (see fig. 15, page 8, paragraph 90); operating a second timer to count a second period of time that is shorter than the first period of time (see paragraphs 12 and 75); retransmitting the radio link set completion message when the reply signal is not received in the second period of time (i.e., as seen in fig. 15, if the radio link setup response is not received, there will be a retransmission) (see figs. 13 and 15)); and finishing the handover procedure (see page 2, paragraph 20).

Although Kim discloses a method as described, Kim does not specifically disclose a method comprising performing a backup of a present radio link set and changing the present radio link set when the radio link set request is approved; reverting the changed radio link set back to the previous backed-up radio link set when the reply signal is not received and the first timer has expired.

However, Hagting discloses a handover processing method comprising performing a backup of a present radio link set and changing the present radio link set when the radio link set request is approved (i.e., a call with a remote unit is handed over from a first radio access unit to a second radio access unit by suspending transmission of the remote unit at a first radio link

while maintaining the transmission at this first radio link by the first radio access unit is established by the remote unit and the call is resumed at the second radio link after which the radio link is released by the first radio access unit) (see abstract); and reverting the changed radio link set back to the previous backed-up radio link set when the reply signal is not received and the first timer has expired (i.e., the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated) (see col. 3, lines 20-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a handover method, which can be used in synchronously and asynchronously operated environments.

Regarding claim 5, Kim discloses a method (see claim 4 rejection) wherein if the reply signal is received before the first period of time expires, the finishing step is performed by bypassing the reverting step (i.e., upon receipt of the radio link set-up response message, the SNRC establishes a transmission with the active set node) (see fig. 15, and page 8, paragraph 90).

Regarding claim 9, Kim discloses a method (see claim 4 rejection) wherein the second timer is operated at a radio link control layer of user equipment (see page 6, paragraph 75).

Regarding claim 11, Kim discloses a handover processing method for a mobile communication system (see figs. 1-3), the method comprising: requesting a radio link set to a radio network controller (RNC) (i.e., the SRNC transmits a radio link set up request message) (see page 2, paragraph 20); and operating a first timer to count a first period of time (i.e., the

Art Unit: 2617

reception indicator indicates an action time of transmitting user data) (see page 3, paragraph 22); transmitting a radio link set completion message to the RNC (i.e., transmits a radio link setup response message to the SNRC) (see page 2, paragraph 20) and operating a second timer to count a second period of time that is shorter than the first period of time (see paragraphs 12 and 75); checking whether a reply signal in response to the radio link set completion message is received from the RNC (see fig. 15, page 8, paragraph 90); retransmitting the radio link set completion message when the reply signal is not received and the second time period has expired (i.e., as seen in fig. 15, if the radio link setup response is not received, there will be a retransmission) (see fig. 15).

Although Kim discloses a method as described, Kim fails to does not specifically describe a method comprising performing a backup of a present radio link set when the radio link set request is approved and changing the present radio link set; and reverting the changed radio link set back to the backed-up radio link set when the reply signal is not received and the first time period has expired.

However, Hagting discloses a handover processing method comprising performing a backup of a present radio link set when the radio link set is approved and changing the present radio link set (i.e., a call with a remote unit is handed over from a first radio access unit to a second radio access unit by suspending transmission of the remote unit at a first radio link while maintaining the transmission at this first radio link by the first radio access unit is established by the remote unit and the call is resumed at the second radio link after which the radio link is released by the first radio access unit) (see abstract); and reverting the changes radio link set back to the backed-up radio link set when the reply signal is not received an the first time has

expired (i.e., the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated) (see col. 3, lines 20-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a handover method, which can be used in synchronously and asynchronously operated environments.

Regarding claim 12, Kim discloses a method (see claim 11 rejection) wherein when the reply signal is received during the first or second time periods, the reverting step is bypassed and the handover processing is completed (i.e., upon receipt of the radio link set up response message, the SNRC establishes a transmission with the active set node) (see fig. 15, and page 8, paragraph 90).

Regarding claim 14, Kim discloses a method (see claim 11 rejection) wherein the second timer is operated at a radio link control layer of user equipment (see page 6, paragraph 75).

Regarding claim 16, Kim discloses a method of preventing abnormal handover operation, the method comprising: modifying a current radio link set at a user device and then transmitting a completion message to a network device (see page 2, paragraph 20); driving a first timer for counting a first time duration (i.e., the reception indicator indicates an action time of transmitting user data) (see page 3, paragraph 22); checking whether a response signal in response to the completion message is received at the user device (i.e., determines whether a radio link setup response message has been received) (see fig. 15, page 8, paragraph 90); driving a second timer for counting a second time duration (see paragraphs 12 and 75).

Although Kim discloses a method comprising checking whether the reply signal is received within a second time duration that is shorter than the first time duration (a retransmission request and a response for the retransmission request based on HARQ between the UE 130 and the Node B 123 takes a relatively short time) (see fig. 15, paragraphs 12 and 90); retransmitting at least once the completion message to the network device if no response signal is received during the second time duration (i.e., as seen in fig. 15, if the radio link setup response is not received, there will be a retransmission) (see figs. 13 and 15, paragraphs 62, 71-72, and 86), Kim does not specifically disclose a method comprising reverting the modified radio link set to a backup radio link set if the reply signal is not received within a first time duration.

However, Hagting discloses a handover processing method comprising reverting the changes radio link set back to the backed-up radio link set when the reply signal is not received from the RNC within a certain time duration (i.e., the call at the first radio link is maintained while a second radio link is established. If data over the second link is successfully exchanged in both directions, the first radio link is terminated) (see col. 3, lines 20-27).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a handover method, which can be used in synchronously and asynchronously operated environments.

Regarding claim 17, Kim discloses a method (see claim 16 rejection) wherein the response signal is an acknowledgement signal from the network device that acknowledges a receipt of the completion message (see fig. 15, page 8, paragraph 90).

Regarding claim 18, Kim discloses a method (see claim 16 rejection) wherein the network device is a radio network controller in a mobile communication system (i.e., RNC) (see abstract).

Regarding claim 19, Kim discloses a method (see claim 16 rejection) wherein, the checking step, the response signal is a confirmation signal that confirms a receipt of an acknowledgement signal from the network device, the acknowledgment signal acknowledging a receipt of the completion message (see fig. 15, page 8, paragraph 90).

Regarding claim 22, Kim discloses a method (see claim 19 rejection) wherein the network device is a radio network controller in a mobile communication system (i.e., RNC) (see abstract).

4. Claims 3, 6, 10, 13, 15, 21, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and Hagting in further view of Zeira et al. (Zeira), Pub. No. US 20040114574.

Regarding claim 3, Kim and Hagting disclose a method as described above (see claim 2 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first time duration is the same as or greater than a sum of the second time duration and the retransmission time.

However, Zeira discloses a handover method in which the radio network controller determines if the back-to-back allocation is needed for new data or for new retransmission. For retransmission, the allocation is extended for the duration necessary for the retransmission,

Art Unit: 2617

wherein maximum and minimum time duration can be defined. In that case the allocated duration should not exceed the maximum duration (see page 5, paragraphs 80-83). Thus, one skilled in the art would unhesitatingly envision that first duration would be the same as the retransmission time since the retransmission time cannot exceed the maximum time duration.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 6, Kim and Hagting disclose a method as described above (see claim 4 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first timer is operated at a RRC layer of user equipment.

However, Zeira discloses a handover method wherein a timer is operated at a RRC layer of user equipment (i.e., when a configuration or reconfiguration procedure is invoked, the new configuration must take effect at the activation time determined by the RNC RRC) (see page 19, paragraph 556).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 10, Kim and Hagting disclose a method as described above (see claim 4 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first period of time is the same as or greater than a sum of the second period of time and the retransmission time.

However, Zeira discloses a handover method in which the radio network controller determines if the back-to-back allocation is needed for new data or for new retransmission. For retransmission, the allocation is extended for the duration necessary for the retransmission, wherein maximum and minimum time duration can be defined. In that case the allocated duration should not exceed the maximum duration (see page 5, paragraphs 80-83). Thus, one skilled in the art would unhesitatingly envision that first duration would be the same as the retransmission time since the retransmission time cannot exceed the maximum time duration.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 13, Kim and Hagting disclose a method as described above (see claim 11 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first timer is operated at a RRC layer of user equipment.

However, Zeira discloses a handover method wherein a timer is operated at a RRC layer of user equipment (i.e., when a configuration or reconfiguration procedure is invoked, the new configuration must take effect at the activation time determined by the RNC RRC) (see page 19, paragraph 556).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 15, Kim and Hagting disclose a method as described above (see claim 11 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first time period is the same as or greater than a sum of the second time period and the retransmission time.

However, Zeira discloses a handover method in which the radio network controller determines if the back-to-back allocation is needed for new data or for new retransmission. For retransmission, the allocation is extended for the duration necessary for the retransmission, wherein maximum and minimum time duration can be defined. In that case the allocated duration should not exceed the maximum duration (see page 5, paragraphs 80-83). Thus, one skilled in the art would unhesitatingly envision that first duration would be the same as the retransmission time since the retransmission time cannot exceed the maximum time duration.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 21, Kim and Hagting disclose a method as described above (see claim 16 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein the first time duration is equal to or greater than a sum of the second time duration and the retransmission time.

However, Zeira discloses a handover method in which the radio network controller determines if the back-to-back allocation is needed for new data or for new retransmission. For retransmission, the allocation is extended for the duration necessary for the retransmission, wherein maximum and minimum time duration can be defined. In that case the allocated duration should not exceed the maximum duration (see page 5, paragraphs 80-83). Thus, one skilled in the art would unhesitatingly envision that first duration would be the same as the retransmission time since the retransmission time cannot exceed the maximum time duration.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 23, Kim and Hagting disclose a method as described above (see claim 16 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein a timer at a radio resource control layer of the user device controls the first time duration.

However, Zeira discloses a handover method wherein a timer is operated at a RRC layer of user equipment (i.e., when a configuration or reconfiguration procedure is invoked, the new configuration must take effect at the activation time determined by the RNC RRC) (see page 19, paragraph 556).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Regarding claim 24, Kim and Hagting disclose a method as described above (see claim 16 rejection).

Although the combination discloses a method as described, the combination fails to specifically disclose a method wherein first and second timers at a radio resource control layer of the user device.

However, Zeira discloses a handover method wherein first and second timers at a radio resource control layer of the user device control the first and second timer (see page 16, paragraph 524 and page 19, paragraph 556).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both arts to arrive at the claimed invention. A motivation for doing so would have been to provide a time period to account for the signaling delay, which may occur.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


Art Unit: 2617

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Louis Desir whose telephone number is (571) 272-7799. The examiner can normally be reached on Monday-Friday 8:00AM- 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Pierre-Louis Desir
02/25/2007

JEAN GELIN
PRIMARY EXAMINER

